References

Abernathy, W. J., Clark, K. B., 1985. Innovation: Mapping the winds of creative destruction. *Research Policy* 14, 3–22. https://doi.org/10.1016/0048-7333(85)90021-6

Abraham, J., 2019. Just transitions in a dual labor market: Right wing populism and austerity in the German *energiewende*. *Journal of Labor and Society* 22, 679–693. https://doi.org/10.1111/LANDS.12438

Adams, N. N., Mueller-Hirth, N., 2021. Collaborate and die! Exploring different understandings of organisational cooperation within Scotland's uncertain North Sea oil and gas industry. *Energy Research & Social Science* 73, 101909. https://doi.org/10.1016/j.erss.2021.101909

Afewerki, S., Karlsen, A., 2022. Policy mixes for just sustainable development in regions specialized in carbon-intensive industries: The case of two Norwegian petro-maritime regions. *European Planning Studies* 30, 2273–2292. https://doi.org/10.1080/09654313.2021.1941786

Alberts, E. C., 2023. Norway proposes opening Germany-sized area of its continental shelf to deep-sea mining. *Mongabay.* April 20, 2023. https://news.mongabay.com/2023/04/norway-proposes-opening-germany-sized-area-of-its-continental-shelf-to-deep-sea-mining/

Allenby, B. R., 2016. Environmental security: Concept and implementation. *International Political Science Review* 21, 5–21. https://doi.org/10.1177/0192512100211001

Andersen, A. D., Gulbrandsen, M., 2020. The innovation and industry dynamics of technology phase-out in sustainability transitions: Insights from diversifying petroleum technology suppliers in Norway. *Energy Research & Social Science* 64, 101447. https://doi.org/10.1016/j.erss.2020.101447

Andersson, J., Hellsmark, H., Sandén, B., 2021. The outcomes of directionality: Towards a morphology of sociotechnical systems. *Environmental Innovation and Societal Transitions* 40, 108–131. https://doi.org/10.1016/J.EIST.2021.06.008

Ang, B. W., Choong, W. L., Ng, T. S., 2015. Energy security: Definitions, dimensions and indexes. *Renewable and Sustainable Energy Reviews* 42, 1077–1093. https://doi.org/10.1016/J.RSER.2014.10.064

Antadze, N., McGowan, K. A., 2017. Moral entrepreneurship: Thinking and acting at the landscape level to foster sustainability transitions. *Environmental Innovation and Societal Transitions* 25, 1–13. https://doi.org/10.1016/J.EIST.2016.11.001

Aradau, C., 2004. Security and the democratic scene: Desecuritization and emancipation. *Journal of International Relations and Development* 7, 388–413. https://doi.org/10.1057/palgrave.jird.1800030

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 13 Nov 2026 at 06:57:54, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009368155

Arter, D., 2000. Small state influence within the EU: The case of Finland's "Northern Dimension Initiative." *JCMS: Journal of Common Market Studies* 38, 677–697. https://doi.org/10.1111/1468-5965.00260

Auer, M. R., 1998. Environmentalism and Estonia's independence movement. *Nationalities Papers* 26(4), 659–676. DOI: 10.1080/00905999808408593

Austin, P. L., 2021. This company was hit with a devastating ransomware attack. *TIME*. 07.14.2021. https://time.com/6080293/norsk-hydro-ransomware-attack/

Avelino, F., 2021. Theories of power and social change. Power contestations and their implications for research on social change and innovation. *Journal of Political Power* 1–24. https://doi.org/10.1080/2158379X.2021.1875307

Avelino, F., Wittmayer, J. M., 2015. Shifting power relations in sustainability transitions: A multi-actor perspective. *Journal of Environmental Policy and Planning* 18, 628–649. https://doi.org/10.1080/1523908X.2015.1112259

Azzuni, A., Breyer, C., 2018. Definitions and dimensions of energy security: A literature review. *Wiley Interdisciplinary Reviews: Energy and Environment* 7, e268. https://doi.org/10.1002/WENE.268

Bang, G., Lahn, B., 2020. From oil as welfare to oil as risk? Norwegian petroleum resource governance and climate policy. *Climate Policy* 20, 997–1009. https://doi.org/10.1080/14693062.2019.1692774

Bazilian, M., Sovacool, B., Moss, T., 2017. Rethinking energy statecraft: United States foreign policy and the changing geopolitics of energy. *Global Policy* 8(3), 422–425. https://doi.org/10.1111/1758-5899.12461

BEIS, 2022. Record funding uplift for UK battery research and development. Department for Business, Energy and Industrial Strategy, London, UK.

BEIS, 2023. Resilience for the future: The UK's critical minerals strategy. Department for Business, Energy and Industrial Strategy, London, UK.

Berkhout, F., Angel, D., Wieczorek, A. J., 2009. Asian development pathways and sustainable socio-technical regimes. *Technological Forecasting and Social Change* 76, 218–228. https://doi.org/10.1016/J.TECHFORE.2008.03.017

Berling, T. V., Gad, U. P., Petersen, K. L., Wæver, O., 2021. *Translations of Security: A Framework for the Study of Unwanted Futures*. Routledge, Abingdon and New York. https://doi.org/10.4324/9781003175247

Berzina, I. 2020. From "Total" to "Comprehensive" national defence: The development of the concept in Europe. *Journal on Baltic Security* 6(2), 1–9. Baltic Defence College. DOI: 10.2478/jobs-2020-0006

Blindheim, B., 2013. Implementation of wind power in the Norwegian market; the reason why some of the best wind resources in Europe were not utilised by 2010. *Energy Policy* 58, 337–346. https://doi.org/10.1016/j.enpol.2013.03.033

Blondeel, M., Bradshaw, M. J., Bridge, G., Kuzemko, C., 2021. The geopolitics of energy system transformation: A review. *Geography Compass* 15, e12580. https://doi.org/10.1111/GEC3.12580

Blythe, J., Silver, J., Evans, L., Armitage, D., Bennett, N. J., Moore, M. L., Morrison, T. H., Brown, K., 2018. The dark side of transformation: Latent risks in contemporary sustainability discourse. *Antipode* 50, 1206–1223. https://doi.org/10.1111/ANTI.12405

Boasson, E. L., 2021. Norway: Certificate supporters turning opponents, in: Boasson, E. L., Leiren, M. D., Wettestad, J. (Eds.), *Comparative Renewables Policy: Political, Organizational and European Fields*. Routledge, Abingdon and New York, pp. 193–216.

Bocse, A.-M., 2020. NATO, energy security and institutional change. *European Security* 29, 436–455. https://doi.org/10.1080/09662839.2020.1768072

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 13 Nov 2026 at 06:57:54, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009368155

Bögel, P. M., Upham, P., 2018. Role of psychology in sociotechnical transitions studies: Review in relation to consumption and technology acceptance. *Environmental Innovation and Societal Transitions* 28, 122–136. https://doi.org/10.1016/J.EIST.2018.01.002

Bolton, R., 2021. *Making Energy Markets: The Origins of Electricity Liberalisation in Europe*. Springer, Cham.

Booth, K., 1991. Security and emancipation. *Review of International Studies* 17(4), 313–326. doi:10.1017/S0260210500112033

Booth, K., 2007. *Theory of World Security*. Cambridge University Press, Cambridge.

Busby, J. 2022. *States and Nature: The Effects of Climate Change on Security*. Cambridge University Press, Cambridge, UK.

Buzan, B., Wæver, O., de Wilde, J., 1998. *Security: A New Framework for Analysis*. Lynne Riener, Boulder.

Candel, J. J. L., 2021. The expediency of policy integration. *Policy Studies* 42, 346–361. https://doi.org/10.1080/01442872.2019.1634191

Candel, J. J. L., Biesbroek, R., 2016. Toward a processual understanding of policy integration. *Policy Sciences* 49, 211–231. https://doi.org/10.1007/s11077-016-9248-y

Carbone, M., 2008. Mission impossible: The European Union and policy coherence for development. *Journal of European Integration* 30, 323–342. https://doi.org/10.1080/07036330802144992

Carter, T. R., Benzie, M., Campiglio, E., Carlsen, H., Fronzek, S., Hildén, M., Reyer, C. P. O., West, C., 2021. A conceptual framework for cross-border impacts of climate change. *Global Environmental Change* 69. https://doi.org/10.1016/j.gloenvcha.2021.102307

CCC, 2022. *Progress in Reducing Emissions in Scotland: 2022 Report to Parliament*. Climate Change Committee, London, UK.

Chaar, A. M., Mangalagiu, D., Khoury, A., Nicolas, M., 2020. Transition towards sustainability in a post-conflict country: A neo-institutional perspective on the Lebanese case. *Climatic Change* 160, 691–709. https://doi.org/10.1007/S10584-019-02478-7/TABLES/2

Cherp, A., Jewell, J., 2011. The three perspectives on energy security: Intellectual history, disciplinary roots and the potential for integration. *Current Opinion in Environmental Sustainability* 3(4): 202–212. https://doi.org/10.1016/j.cosust.2011.07.001

Cherp, A., Jewell, J., 2014. The concept of energy security: Beyond the four as. *Energy Policy* 75, 415–421. https://doi.org/10.1016/j.enpol.2014.09.005

Chester, L., 2010. Conceptualising energy security and making explicit its polysemic nature. *Energy Policy* 38, 887–895. https://doi.org/10.1016/J.ENPOL.2009.10.039

Child, M., Kemfert, C., Bogdanov, D., Breyer, C., 2019. Flexible electricity generation, grid exchange and storage for the transition to a 100% renewable energy system in Europe. *Renewable Energy* 139, 80–101. https://doi.org/10.1016/J.RENENE.2019.02.077

Cook, C., Bakker, K., 2012. Water security: Debating an emerging paradigm. *Global Environmental Change* 22, 94–102. https://doi.org/10.1016/J.GLOENVCHA.2011.10.011

Cornell, P., 2019. International grid integration: Efficiencies, vulnerabilities, and strategic implications in Asia. *Atlantic Council*. www.atlanticcouncil.org/in-depth-research-reports/report/international-grid-integration-efficiencies-vulnerabilities-and-strategic-implications-in-asia/

Corry, O., 2011. Securitisation and "Riskification": Second-order security and the politics of climate change. *Millennium: Journal of International Studies* 40, 235–258. https://doi.org/10.1177/0305829811419444

Cortright, D., Seyle, C., Wall, K., 2017. *Governance for Peace*. Cambridge University Press, Cambridge, UK.

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 13 Nov 2026 at 06:57:54, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009368155

Cowell, R., Ellis, G., Sherry-Brennan, F., Strachan, P. A., Toke, D., 2017. Energy transitions, sub-national government and regime flexibility: How has devolution in the United Kingdom affected renewable energy development? *Energy Research & Social Science* 23, 169–181. https://doi.org/10.1016/j.erss.2016.10.006

CPTRA, 2023. Superficies licences for offshore wind farms. Consumer Protection and Technical Regulatory Authority of Estonia. Accessed November 2, 2023: https://ttja.ee/en/business-client/buildings-construction/superficies-licences-offshore-wind-farms

Crandall, M., 2014. Soft security threats and small states: The case of Estonia. *Defence Studies* 14, 30–55. https://doi.org/10.1080/14702436.2014.890334

Criekemans, D., 2018. Geopolitics of the renewable energy game and its potential impact upon global power relations, in: Scholten, D. (Ed.), *Geopolitics of Renewables*. Springer, pp. 37–73. https://doi.org/10.1007/978-3-319-67855-9_2

Dalby, S., 2002. *Environmental Security*. University of Minnesota Press, Minneapolis.

Depledge, D., 2023. Low-carbon warfare: Climate change, net zero and military operations. *International Affairs* iiad001. https://doi.org/10.1093/ia/iiad001

Depledge, D., Kennedy-Pipe, C., Rogers, J., 2019. The UK and the Arctic: Forward defence, in: *Arctic Yearbook 2019*. https://arcticyearbook.com/arctic-yearbook/2019

Desmidt, S., 2021. Climate change and security in North Africa Focus on Algeria, Morocco and Tunisia. Cascades Research Paper. Accessed October 9, 2023: www.cascades.eu/wp-content/uploads/2021/02/CASCADES-Research-paper-Climate-change-and-security-in-North-Africa-1.pdf

DESNZ, 2023a. Energy trends. Accessed October 6, 2023: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1126161/Energy_Trends_December_2022.pdf

DESNZ, 2023b. Digest of UK Energy Statistics (DUKES): Energy. Accessed October 6, 2023: www.gov.uk/government/statistics/energy-chapter-1-digest-of-united-kingdom-energy-statistics-dukes

Dorfman, A., 2017. *The Future of British Defence Policy* (No. 74). IFRI, Paris.

Dorfman, P., 2021. Climate impact: UK nuclear military. Nuclear Consulting Group. Accessed October 9, 2023: www.preventionweb.net/publication/climate-impact-uk-nuclear-military

Dupont, C., 2019. The EU's collective securitisation of climate change. *West European Politics* 42, 369–390. https://doi.org/10.1080/01402382.2018.1510199

Dyer, H., 2016. Energy Security and Energy Policy Incoherence, in: *Delivering Energy Law and Policy in the EU and the US*. Edinburgh University Press, Edinburgh.

Earnst & Young, 2023. Just Transition Review of the Scottish Energy Sector: Summary Report. Accessed March 31, 2023: www.energy-system-and-just-transition-independent-analysis.co.uk/summary-report.pdf

EC, 2014. COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL European Energy Security Strategy, COM(2014) 330 final. European Commission, Brussels, Belgium.

EC, 2020. Critical raw materials resilience: Charting a path towards greater security and sustainability, COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS. European Commission, Brussels, Belgium.

Edmondson, D. L., Kern, F., Rogge, K. S., 2019. The co-evolution of policy mixes and socio-technical systems: Towards a conceptual framework of policy mix feedback in sustainability transitions. *Research Policy* 48. https://doi.org/10.1016/j.respol.2018.03.010

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 13 Nov 2026 at 06:57:54, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009368155

Equinor, 2023. *2022 Integrated Annual Report*. Equinor, Stavanger.
ERR, 2021. Competition authority: Electricity market heavily import-dependent. ERR 3.11.2021. Accessed October 9, 2023: https://news.err.ee/1608390869/competition-authority-electricity-market-heavily-import-dependent
Estonian Defence Forces, 2023. Estonian defence forces. Accessed October 4, 2023: https://mil.ee/en/defence-forces/
Eurostat, 2023. Energy statistics – An overview. Accessed 22.08.2023: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_statistics_-_an_overview#:~:text=EU%20energy%20import%20dependency%20rate%20stood%20at%2055.5%25%20in%202021.&text=Gross%20available%20energy%20in%20the,by%206.0%25%20compared%20wi
Fankhouser, S., Averchenkova, A., Finnegan, J., 2018. 10 years of the UK Climate Change Act. London School of Economics, London, UK. Accessed March 30, 2023: www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2018/03/10-Years-of-the-UK-Climate-Change-Act_Fankhauser-et-al.pdf
Farham, A., Kossman, S., van Rij, A. 2023. *Preparing NATO for Climate-Related Security Challenges*. Chatham House Research Paper. Chatham House, London.
Feola, G., Vincent, O., Moore, D., 2021. (Un)making in sustainability transformation beyond capitalism. *Global Environmental Change* 69, 102290. https://doi.org/10.1016/j.gloenvcha.2021.102290
Finland's Wind Power Association, 2022. Tuulivoima Suomessa 2022. Accessed October 5, 2023: https://tuulivoimayhdistys.fi/media/tuulivoima_vuositilastot_2022-1.pdf
Finland's Wind Power Association, 2023. Tuulivoimatilastot 6/2023. Accessed October 5, 2023: https://tuulivoimayhdistys.fi/ajankohtaista/tilastot-2/tuulivoiman-rakentamisen-tahti-jatkuu-tasaisena-2
Finnish Defence Forces, 2022. Puolustusvoimien energia- ja ilmasto-ohjelman 2022–2025 tavoitteet ja toimenpiteet. Defence Forces, Helsinki.
Finnish Security Committee, 2017. Security strategy for society, government resolution 2.11.2017. Helsinki.
Fischhendler, I., Herman, L., David, L., 2021. Light at the end of the panel: The Gaza strip and the interplay between geopolitical conflict and renewable energy transition. *New Political Economy* 27(1), 1–18. https://doi.org/10.1080/13563467.2021.1903850
Fischhendler, I., Herman, L., Maoz, N., 2017. The political economy of energy sanctions: Insights from a global outlook 1938–2017. *Energy Research & Social Science* 34, 62–71. https://doi.org/10.1016/j.erss.2017.05.008
Flanagan, K., Uyarra, E., Laranja, M., 2011. Reconceptualising the "policy mix" for innovation. *Research Policy* 40, 702–713. https://doi.org/10.1016/J.RESPOL.2011.02.005
Fleming, C., 2021. What would an independent Scotland's defence and security priorities be? in: Hepburn, E., Keating, M., McEwen, N. (Eds.), *Scotland's New Choice: Independence after Brexit*. Centre on Constitutional Change, Edinburgh, 189–197.
Floyd, R., 2019. *The Morality of Security: A Theory of Just Securitisation*. Cambridge University Press, Cambridge, UK.
Ford, A., Newell, P., 2021. Regime resistance and accommodation: Toward a neo-Gramscian perspective on energy transitions. *Energy Research & Social Science* 79, 102163. https://doi.org/10.1016/J.ERSS.2021.102163
Formin, 2016. Fennovoima Oy:n ydinvoimalahanketta koskeva rakentamislupahakemus; ulkoasiainministeriön lausunto 21.6.2023. Accessed October 9, 2023: https://tem.fi/documents/1410877/2616019/Ulkoministeri%C3%B6n+lausunto.pdf

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 13 Nov 2026 at 06:57:54, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009368155

Foxon, T. J., 2011. A coevolutionary framework for analysing a transition to a sustainable low carbon economy. *Ecological Economics* 70, 2258–2267. https://doi.org/10.1016/J.ECOLECON.2011.07.014

Freeman, D., 2018. China and renewables: The priority of economics over geopolitics, in: Scholten, D. (Ed.), *Geopolitics of Renewables*. Springer, pp. 187–201. https://doi.org/10.1007/978-3-319-67855-9_7

Furness, M., Gänzle, S., 2017. The security–development Nexus in European Union foreign relations after Lisbon: Policy coherence at last? *Development Policy Review* 35, 475–492. https://doi.org/10.1111/dpr.12191

Geels, F. W., 2002. Technological transitions as evolutionary reconfiguration processes: A multi-level perspective and a case-study. *Research Policy* 31, 1257–1274. https://doi.org/10.1016/s0048-7333(02)00062-8

Geels, F. W., 2004. From sectoral systems of innovation to socio-technical systems: Insights about dynamics and change from sociology and institutional theory. *Research Policy* 33, 897–920. https://doi.org/10.1016/j.respol.2004.01.015

Geels, F. W., 2005a. Co-evolution of technology and society: The transition in water supply and personal hygiene in the Netherlands (1850–1930) – A case study in multi-level perspective. *Technology in Society* 27, 363–397. https://doi.org/10.1016/J.TECHSOC.2005.04.008

Geels, F. W., 2005b. Processes and patterns in transitions and system innovations: Refining the co-evolutionary multi-level perspective. *Technological Forecasting and Social Change* 72, 681–696. https://doi.org/10.1016/j.techfore.2004.08.014

Geels, F. W., 2006. Multi-level perspective on system innovation: Relevance for industrial transformation? in: Olsthoorn, X., Wieczorek, A. J. (Eds.), *Understanding Industrial Transformation: Views from Different Disciplines*. Springer, Dordrecht, pp. 163–186.

Geels, F. W., 2007. Analysing the breakthrough of rock "n" roll (1930–1970) Multi-regime interaction and reconfiguration in the multi-level perspective. *Technological Forecasting & Social Change* 74, 1411–1431. https://doi.org/10.1016/j.techfore.2006.07.008

Geels, F. W., 2011. The multi-level perspective on sustainability transitions: Responses to seven criticisms. *Environmental Innovation and Societal Transitions*. https://doi.org/10.1016/j.eist.2011.02.002

Geels, F. W., 2014. Regime resistance against low-carbon transitions: Introducing politics and power into the multi-level perspective. *Theory, Culture & Society* 31, 21–40. https://doi.org/10.1177/0263276414531627

Geels, F. W., Kern, F., Fuchs, G., Hinderer, N., Kungl, G., Mylan, J., Neukirch, M., Wassermann, S., 2016. The enactment of socio-technical transition pathways: A reformulated typology and a comparative multi-level analysis of the German and UK low-carbon electricity transitions (1990–2014). *Research Policy* 45, 896–913. https://doi.org/10.1016/J.RESPOL.2016.01.015

Geels, F. W., Schot, J., 2007. Typology of sociotechnical transition pathways. *Research Policy*, 36, 399–417. https://doi.org/10.1016/j.respol.2007.01.003

Geels, F. W., Verhees, B., 2011. Cultural legitimacy and framing struggles in innovation journeys: A cultural-performative perspective and a case study of Dutch nuclear energy (1945–1986). *Technological Forecasting & Social Change* 78, 910–930. https://doi.org/10.1016/j.techfore.2010.12.004

Genus, A., Coles, A.-M., 2008. Rethinking the multi-level perspective of technological transitions. *Research Policy* 37, 1436–1445. https://doi.org/10.1016/j.respol.2008.05.006

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 13 Nov 2026 at 06:57:54, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009368155

Ghosh, B., Kivimaa, P., Ramirez, M., Schot, J., Torrens, J., 2021. Transformative outcomes: Assessing and reorienting experimentation with transformative innovation policy. *Science and Public Policy* 48, 739–756. https://doi.org/10.1093/SCIPOL/SCAB045

Ghosh, B., Schot, J., 2019. Towards a novel regime change framework: Studying mobility transitions in public transport regimes in an Indian megacity. *Energy Research & Social Science* 51, 82–95. https://doi.org/10.1016/J.ERSS.2018.12.001

Gjørv, G. H., 2012. Security by any other name: Negative security, positive security, and a multi-actor security approach. *Review of International Studies* 38, 835–859. https://doi.org/10.1017/S0260210511000751

Godzimirski, J. M., 2022. Protection of critical infrastructure in Norway – Factors, actors and systems. *Security and Defence Quarterly* 39, 45–62. https://doi.org/10.35467/sdq/151964

Gorissen, L., Spira, F., Meynaerts, E., Valkering, P., Frantzeskaki, N., 2018. Moving towards systemic change? Investigating acceleration dynamics of urban sustainability transitions in the Belgian City of Genk. *Journal of Cleaner Production* 173, 171–185. https://doi.org/10.1016/J.JCLEPRO.2016.12.052

Greim, P., Solomon, A. A., Breyer, C., 2020. Assessment of lithium criticality in the global energy transition and addressing policy gaps in transportation. *Nature Communications* 11, 1–11. https://doi.org/10.1038/s41467-020-18402-y

Griffiths, S., 2019. Energy diplomacy in a time of energy transition. *Energy Strategy Reviews* 26, 100386. https://doi.org/10.1016/j.esr.2019.100386

Grin, J., Rotmans, J., Schot, J. W., 2010. *Transitions to Sustainable Development New Directions in the Study of Long Term Transformative Change*. Routledge, New York.

Groves, C., Henwood, K., Pidgeon, N., Cherry, C., Roberts, E., Shirani, F., Thomas, G., 2021. The future is flexible? Exploring expert visions of energy system decarbonisation. *Futures* 130, 102753. https://doi.org/10.1016/j.futures.2021.102753

Hancock, K. J., Sovacool, B. K., 2018. International political economy and renewable energy: Hydroelectric power and the resource curse. *International Studies Review* 20, 615–632. https://doi.org/10.1093/isr/vix058

Hansen, L., 2012. Reconstructing desecuritisation: The normative-political in the Copenhagen School and directions for how to apply it. *Review of International Studies* 38, 525–546. https://doi.org/10.1017/S0260210511000581

Hansen, S. T., Moe, E., 2022. Renewable energy expansion or the preservation of national energy sovereignty? Norwegian renewable energy policy meets resource nationalism. *Political Geography* 99, 102760. https://doi.org/10.1016/j.polgeo.2022.102760

Haukkala, T., 2018. A struggle for change – The formation of a green-transition advocacy coalition in Finland. *Environmental Innovation and Societal Transitions* 27, 146–156. https://doi.org/10.1016/j.eist.2017.12.001

Healy, N., Barry, J., 2017. Politicizing energy justice and energy system transitions: Fossil fuel divestment and a "just transition." *Energy Policy* 108, 451–459. https://doi.org/10.1016/j.enpol.2017.06.014

Hebinck, A., Diercks, G., von Wirth, T., Beers, P. J., Barsties, L., Buchel, S., Greer, R., van Steenbergen, F., Loorbach, D., 2022. An actionable understanding of societal transitions: The X-curve framework. *Sustainability Science* 1, 1–13. https://doi.org/10.1007/S11625-021-01084-W/FIGURES/3

Heffron, R. J., Nuttall, W. J., 2017. Scotland, nuclear energy policy and independence, in: Wood, G., Baker, K. (Eds.), *A Critical Review of Scottish Renewable and Low Carbon Energy Policy*. Palgrave Macmillan, Cham, Switzerland, pp. 103–126.

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 13 Nov 2026 at 06:57:54, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009368155

Heinrich, A., 2018. Securitisation in the gas sector: Energy security debates concerning the example of the Nord Stream Pipeline, in: Szulecki, K. (Ed.), *Energy Security in Europe*. Palgrave Macmillan, Cham, Switzerland, pp. 61–91. https://doi.org/10.1007/978-3-319-64964-1_3

Heinrich, A., Szulecki, K., 2018. Energy securitisation: Applying the Copenhagen school's framework to energy, in: Szulecki, K. (Ed.), *Energy Security in Europe: Divergent Perceptions and Policy Challenges*. Palgrave Macmillan, Cham, Switzerland, pp. 33–60.

Hillion, C., 2019. Norway and the changing Common Foreign and Security Policy of the European Union, NUPI Report 1/2019. Norwegian Institute of International Affairs, Oslo. Accessed October 10, 2023: https://nupi.brage.unit.no/nupi-xmlui/bitstream/handle/11250/2582455/NUPI_Report_1_2019_Hillion.pdf.

HM Government, 2020. Energy white paper: Powering our net zero future. Her Majesty's Government, London, UK. Accessed May 14, 2024. www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future

HM Government, 2021. Global Britain in a competitive age: The integrated review of security, defence, development and foreign policy (Policy Paper No. CP403). HM Government, UK. Accessed October 10, 2023: www.gov.uk/government/publications/global-britain-in-a-competitive-age-the-integrated-review-of-security-defence-development-and-foreign-policy

HM Government, 2023. Integrated review refresh 2023: Responding to a more contested and volatile world. His Majesty's Government, London, UK. Accessed October 10, 2023: www.gov.uk/government/publications/integrated-review-refresh-2023-responding-to-a-more-contested-and-volatile-world

Holmberg, R., 2008. Survival of the unfit: Path dependence and the Estonian oil shale industry. Linköping Studies in Arts and Science No. 427. Doctoral thesis, Linköping University, Sweden.

Holmgren, S., Pever, M., Fischer, K., 2019. Constructing low-carbon futures? Competing storylines in the Estonian energy sector's translation of EU energy goals. *Energy Policy* 135, 111063. https://doi.org/10.1016/j.enpol.2019.111063

Hoogensen Gjørv, G., 2011. Gender, identity, and human security: Can we learn anything from the case of women terrorists? *Canadian Foreign Policy Journal* 12, 119–140. https://doi.org/10.1080/11926422.2005.9673392

Hoogensen Gjørv, G., 2012. Security by any other name: Negative security, positive security, and a multi-actor security approach. *Review of International Studies* 38, 835–859. https://doi.org/10.1017/S0260210511000751

Hoogensen Gjørv, G., Bilgic, A., 2022. *Positive Security: Collective Life in an Uncertain World*. Routledge, Abingdon, Oxon.

Hoogma, R., Kemp, R., Schot, J., Truffer, B., 2002. *Experimenting for Sustainable Transport: The Approach of Strategic Niche Management*. Spon Press, London.

Howlett, M., How, Y., Del Rio, P., 2015. The parameters of policy portfolios: Verticality and horizontality in design spaces and their consequences for policy mix formulation. *Environment and Planning C: Government and Policy* 33. https://doi.org/10.1177/0263774X15610059

Höysniemi, S., 2022. Energy futures reimagined: The global energy transition and dependence on Russian energy as issues in the sociotechnical imaginaries of energy security in Finland. *Energy Research & Social Science* 93, 102840. https://doi.org/10.1016/j.erss.2022.102840

Huda, M. S., 2020. *Energy Cooperation in South Asia: Utilising Natural Resources for Peace and Sustainable Development*. Routledge, New York & Abingdon.

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 13 Nov 2026 at 06:57:54, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009368155

Huttunen, S., Kaljonen, M., Lonkila, A., Rantala, S., Rekola, A., Paloniemi, R., 2021. Pluralising agency to understand behaviour change in sustainability transitions. *Energy Research and Social Science* 76, 102067. https://doi.org/10.1016/j.erss.2021.102067

Huttunen, S., Kivimaa, P., Virkamäki, V., 2014. The need for policy coherence to trigger a transition to biogas production. *Environmental Innovation and Societal Transitions* 12: 14–30. https://doi.org/10.1016/j.eist.2014.04.002

Huysmans, J., 1998. Security! What do you mean?: From concept to thick signifier. *European Journal of International Relations* 4(2), 226–255.

IEA, 2018. Finland 2018 Review. International Energy Agency, Paris. Accessed October 10, 2023: www.iea.org/reports/energy-policies-of-iea-countries-finland-2018-review

IEA, 2019. Estonia 2019 Review. International Energy Agency, Paris. Accessed: May 14, 2024 www.iea.org/reports/energy-policies-of-iea-countries-estonia-2019-review

IEA, 2021. The role of critical minerals in clean energy transitions. International Energy Agency, Paris. Accessed October 10, 2023: www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions

IEA, 2022. Norway 2022: Energy policy review. International Energy Agency, Paris. Accessed October 10, 2023: www.iea.org/reports/norway-2022

IEA, 2023. Renewable energy. International Energy Agency, Paris. Accessed December 11, 2023: www.iea.org/reports/renewables-2022/renewable-electricity

IEA, 2024. About: Mission statement. Accessed 30 April 2024: www.iea.org/about

Isoaho, K., Markard, J., 2020. The politics of technology decline: Discursive struggles over coal phase-out in the UK. *Review of Policy Research*. https://doi.org/10.1111/ropr.12370

Jääskeläinen, J. J., Höysniemi, S., Syri, S., Tynkkynen, V. P., 2018. Finland's dependence on Russian energy-mutually beneficial trade relations or an energy security threat? *Sustainability (Switzerland)* 10(10): 3445. https://doi.org/10.3390/su10103445

Jenkins, K., Sovacool, B. K., McCauley, D., 2018. Humanizing sociotechnical transitions through energy justice: An ethical framework for global transformative change. *Energy Policy* 117, 66–74. https://doi.org/10.1016/j.enpol.2018.02.036

Jewell, J., Brutschin, E., 2021. The politics of energy security, in: Hancock, K. J., Allison, J. E. (Eds.), *The Oxford Handbook of Energy Politics*. Oxford University Press, Oxford, pp. 247–274. https://doi.org/10.1093/oxfordhb/9780190861360.013.10

Joensuu, K., Väyrynen, L., Tolppanen, J., Karhu, L., Salmi, T., Hartikka, S., Leino, L., Viljanen, J., Smids, S., Hujanen, A., Sipilä, M., Huuskonen, A., 2021. Tuulivoimarakentamisen edistäminen: Keinoja sujuvaan hankekehitykseen ja eri tavoitteiden yhteensovitukseen. Publications of the Prime Minister's Office 2021/51, Helsinki, Finland. Accessed October 10, 2023: https://julkaisut.valtioneuvosto.fi/handle/10024/163302

Johansson, B., 2013. Security aspects of future renewable energy systems – A short overview. *Energy* 61, 598–605. https://doi.org/10.1016/j.energy.2013.09.023

Johnstone, P., Kivimaa, P., 2018. Multiple dimensions of disruption, energy transitions and industrial policy. *Energy Research and Social Science* 37, 260–265. https://doi.org/10.1016/j.erss.2017.10.027

Johnstone, P., McLeish, C., 2022. World wars and sociotechnical change in energy, food, and transport: A deep transitions perspective. *Technological Forecasting and Social Change* 174, 121206. https://doi.org/10.1016/J.TECHFORE.2021.121206

Johnstone, P., Newell, P., 2018. Sustainability transitions and the state. *Environmental Innovation and Societal Transitions* 27, 72–82. https://doi.org/10.1016/J.EIST.2017.10.006

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 13 Nov 2026 at 06:57:54, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009368155

Johnstone, P., Rogge, K. S., Kivimaa, P., Farné Fratini, C., Primmer, E., 2021. Exploring the re-emergence of industrial policy: Perceptions regarding low-carbon energy transitions in Germany, the United Kingdom and Denmark. *Energy Research & Social Science* 74, 101889. https://doi.org/10.1016/j.erss.2020.101889

Johnstone, P., Rogge, K. S., Kivimaa, P., Fratini, C. F., Primmer, E., Stirling, A., 2020. Waves of disruption in clean energy transitions: Sociotechnical dimensions of system disruption in Germany and the United Kingdom. *Energy Research and Social Science* 59, 101287. https://doi.org/10.1016/j.erss.2019.101287

Johnstone, P., Stirling, A., 2020. Comparing nuclear trajectories in Germany and the United Kingdom: From regimes to democracies in sociotechnical transitions and discontinuities. *Energy Research & Social Science* 59, 101245. https://doi.org/10.1016/J.ERSS.2019.101245

Johnstone, P., Stirling, A., Sovacool, B., 2017. Policy mixes for incumbency: Exploring the destructive recreation of renewable energy, shale gas "fracking," and nuclear power in the United Kingdom. *Energy Research and Social Science* 33, 147–162. https://doi.org/10.1016/j.erss.2017.09.005

Jordan, A., Lenschow, A., 2010. Policy paper environmental policy integration: A state of the art review. *Environmental Policy and Governance* 20, 147–158. https://doi.org/10.1002/eet.539

Jordan, M., Hewitt, A., 2022. Depoliticization, participation and social art practice: On the function of social art practice for politicization. *Art & the Public Sphere* 11, 19–36. https://doi.org/10.1386/aps_00066_1

Juozaitis, J., 2020. The synchronization of the Baltic States': Geopolitical implications on the Baltic Sea region and beyond. Energy Highlights. Nato Energy Security Centre of Excellence 1–17. Accessed October 10, 2023: https://enseccoe.org/data/public/uploads/2021/10/d1_baltic-states-synchronization-with-continental-european-network-navigating-the-hybrid-threat-landscape.pdf

Kainiemi, L., Karhunmaa, K., Eloneva, S., 2020. Renovation realities: Actors, institutional work and the struggle to transform Finnish energy policy. *Energy Research & Social Science* 70, 101778. https://doi.org/10.1016/j.erss.2020.101778

Kalantzakos, S., Overland, I., Vakulchuk, R., 2023. Decarbonisation and critical materials in the context of fraught geopolitics: Europe's distinctive approach to a net zero future. *The International Spectator* 58, 3–22. https://doi.org/10.1080/03932729.2022.2157090

Kaljonen, M., Kortetmäki, T., Tribaldos, T., Huttunen, S., Karttunen, K., Maluf, R. S., Niemi, J., Saarinen, M., Salminen, J., Vaalavuo, M., Valsta, L., 2021. Justice in transitions: Widening considerations of justice in dietary transition. *Environmental Innovation and Societal Transitions* 40, 474–485. https://doi.org/10.1016/J.EIST.2021.10.007

Kama, K., 2016. Contending geo-logics: Energy security, resource ontologies, and the politics of expert knowledge in Estonia. *Geopolitics* 21, 831–856. https://doi.org/10.1080/14650045.2016.1210129

Kanger, L., Sovacool, B. K., Noorkõiv, M., 2020. Six policy intervention points for sustainability transitions: A conceptual framework and a systematic literature review. *Research Policy* 49, 104072. https://doi.org/10.1016/j.respol.2020.104072

Karlstrøm, H., Ryghaug, M., 2014. Public attitudes towards renewable energy technologies in Norway. The role of party preferences. *Energy Policy* 67, 656–663. https://doi.org/10.1016/j.enpol.2013.11.049

Kelly, P., 2006. A critique of critical geopolitics. Critique of critical geopolitics. *Geopolitics* 11, 24–53. https://doi.org/10.1080/14650040500524053

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 13 Nov 2026 at 06:57:54, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009368155

Kemp, R., Schot, J., Hoogma, R., 1998. Regime shifts to sustainability through processes of niche formation: The approach of strategic niche management. *Technology Analysis and Strategic Management* 10, 175–198. https://doi.org/10.1080/09537329808524310

Kern, F., Howlett, M., 2009. Implementing transition management as policy reforms: A case study of the Dutch energy sector. *Policy Sciences* 42, 391. https://doi.org/10.1007/s11077-009-9099-x

Kern, F., Kivimaa, P., Martiskainen, M., 2017. Policy packaging or policy patching? The development of complex energy efficiency policy mixes. *Energy Research and Social Science* 23, 11–25. https://doi.org/10.1016/j.erss.2016.11.002

Kester, J., Sovacool, B., 2017. Torn between war and peace: Critiquing the use of war to mobilize peaceful climate action. *Energy Policy* 104, 50–55. https://doi.org/10.1016/j.enpol.2017.01.026

Kester, J., Sovacool, B. K., Noel, L., Zarazua de Rubens, G., 2020. Between hope, hype, and hell: Electric mobility and the interplay of fear and desire in sustainability transitions. *Environmental Innovation and Societal Transitions* 35, 88–102. https://doi.org/10.1016/j.eist.2020.02.004

Kivimaa, P., 2008. Finland: Big is beautiful – Promoting bioenergy in regional-industrial contexts, in: Lafferty, W. M., Ruud, A. (Eds.), *Promoting Sustainable Electricity in Europe: Challenging the Path Dependence of Dominant Energy Systems*. Edward Elgar Publishing, Cheltenham, UK, pp. 159–188.

Kivimaa, P., 2022a. Policy and political (in)coherence, security and Nordic–Baltic energy transitions. *Oxford Open Energy* 1, oiac009. https://doi.org/10.1093/ooenergy/oiac009

Kivimaa, P., 2022b. Transforming innovation policy in the context of global security. *Environmental Innovation and Societal Transitions* 43, 55–61. https://doi.org/10.1016/J.EIST.2022.03.005

Kivimaa, P., Boon, W., Hyysalo, S., Klerkx, L., 2019. Towards a typology of intermediaries in sustainability transitions: A systematic review and a research agenda. *Research Policy* 48(4), 1062–1075. https://doi.org/10.1016/j.respol.2018.10.006

Kivimaa, P., Brisbois, M. C., Jayaram, D., Hakala, E., Siddi, M., 2022. A socio-technical lens on security in sustainability transitions: Future expectations for positive and negative security. *Futures* 141, 102971. https://doi.org/10.1016/J.FUTURES.2022.102971

Kivimaa, P., Kangas, H.-L., Lazarevic, D., 2017. Client-oriented evaluation of "creative destruction" in policy mixes: Finnish policies on building energy efficiency transition. *Energy Research and Social Science* 33, 115–127. https://doi.org/10.1016/j.erss.2017.09.002

Kivimaa, P., Kern, F., 2016. Creative destruction or mere niche support? Innovation policy mixes for sustainability transitions. *Research Policy* 45, 205–217. https://doi.org/10.1016/j.respol.2015.09.008

Kivimaa, P., Laakso, S., Lonkila, A., Kaljonen, M., 2021. Moving beyond disruptive innovation: A review of disruption in sustainability transitions. *Environmental Innovation and Societal Transitions* 38, 110–126. https://doi.org/10.1016/j.eist.2020.12.001

Kivimaa, P., Martiskainen, M., 2018. Dynamics of policy change and intermediation: The arduous transition towards low-energy homes in the United Kingdom. *Energy Research & Social Science* 44, 83–99. https://doi.org/10.1016/J.ERSS.2018.04.032

Kivimaa, P., Rogge, K. S., 2022. Interplay of policy experimentation and institutional change in sustainability transitions: The case of mobility as a service in Finland. *Research Policy* 51, 104412. https://doi.org/10.1016/J.RESPOL.2021.104412

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 13 Nov 2026 at 06:57:54, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009368155

Kivimaa, P., Sivonen, M. H., 2021. Interplay between low-carbon energy transitions and national security: An analysis of policy integration and coherence in Estonia, Finland and Scotland. *Energy Research and Social Science* 75, 102024. https://doi.org/10.1016/j.erss.2021.102024

Kivimaa, P., Sivonen, M. H., 2023. How will renewables expansion and hydrocarbon decline impact security? Analysis from a socio-technical transitions perspective. *Environmental Innovation and Societal Transitions* 48, 100744. https://doi.org/10.1016/j.eist.2023.100744

Knox-Hayes, J., Brown, M. A., Sovacool, B. K., Wang, Y., 2013. Understanding attitudes toward energy security: Results of a cross-national survey. *Global Environmental Change* 23, 609–622. https://doi.org/10.1016/j.gloenvcha.2013.02.003

Koch, N., Tynkkynen, V.-P., 2021. The geopolitics of renewables in Kazakhstan and Russia. *Geopolitics* 26, 521–540. https://doi.org/10.1080/14650045.2019.1583214

Koese, M., Blanco, C. F., Breeman, G., Vijver, M. G., 2022. Towards a more resource-efficient solar future in the EU: An actor-centered approach. *Environmental Innovation and Societal Transitions* 45, 36–51. https://doi.org/10.1016/j.eist.2022.09.001

Köhler, J., Geels, F. W., Kern, F., Markard, J., Onsongo, E., Wieczorek, A., Alkemade, F., Avelino, F., Bergek, A., Boons, F., Fünfschilling, L., Hess, D., Holtz, G., Hyysalo, S., Jenkins, K., Kivimaa, P., Martiskainen, M., McMeekin, A., Mühlemeier, M. S., Nykvist, B., Pel, B., Raven, R., Rohracher, H., Sandén, B., Schot, J., Sovacool, B., Turnheim, B., Welch, D., Wells, P., 2019. An agenda for sustainability transitions research: State of the art and future directions. *Environmental Innovation and Societal Transitions* 31, 1–32. https://doi.org/10.1016/j.eist.2019.01.004

Koppel, K., 2022. Sõnajalgs hoping to bring two Aidu wind turbines online soon. *ERR News* 2.12.2022. Accessed August 25, 2023: https://news.err.ee/1608812890/sonajalgs-hoping-to-bring-two-aidu-wind-turbines-online-soon

Koretsky, Z., Stegmaier, P., Turnheim, B., Lente, H. van (Eds.), 2022. *Technologies in Decline: Socio-Technical Approaches to Discontinuation and Destabilisation*. Routledge, London. https://doi.org/10.4324/9781003213642

Korsnes, M., Loewen, B., Dale, R. F., Steen, M., Skjølsvold, T. M., 2023. Paradoxes of Norway's energy transition: Controversies and justice. *Climate Policy*, available online. https://doi.org/10.1080/14693062.2023.2169238

Kruyt, B., van Vuuren, D. P., de Vries, H. J. M., Groenenberg, H., 2009. Indicators for energy security. *Energy Policy* 37, 2166–2181. https://doi.org/10.1016/J.ENPOL.2009.02.006

Kuus, M., 2017. *Critical Geopolitics*, International Studies. Oxford Research Encyclopedias. https://doi.org/10.1093/acrefore/9780190846626.013.137

Kuzemko, C., 2014. Politicising UK energy: What "speaking energy security" can do. *Policy and Politics* 42, 259–274. https://doi.org/10.1332/030557312X655990

Kuzemko, C., 2016. Energy depoliticisation in the UK: Destroying political capacity. *The British Journal of Politics and International Relations* 18, 107–124. https://doi.org/10.1111/1467-856X.12068

Kuzemko, C., Blondeel, M., Dupont, C., Brisbois, M. C., 2022. Russia's war on Ukraine, European energy policy responses & implications for sustainable transformations. *Energy Research & Social Science* 93, 102842. https://doi.org/10.1016/j.erss.2022.102842

Kuzemko, C., Keating, M., Goldthau, A., 2016. *The Global Energy Challenge: Environment, Development and Security*. Palgrave Macmillan UK, London.

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 13 Nov 2026 at 06:57:54, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009368155

Laakso, S., Aro, R., Heiskanen, E., Kaljonen, M., 2020. Reconfigurations in sustainability transitions: A systematic and critical review. *Sustainability: Science, Practice and Policy* 17, 15–31. https://doi.org/10.1080/15487733.2020.1836921

Lafferty, W., Hovden, E., 2003. Environmental policy integration: Towards an analytical framework. *Environmental Politics* 12, 1–22. https://doi.org/10.1080/09644010412331308254

Lawhon, M., Silver, J., Ernstson, H., Pierce, J., 2016. Unlearning (Un)located ideas in the provincialization of urban theory. *Regional Studies* 50(9), 1611–1622. https://doi.org/10.1080/00343404.2016.11622

Lawson, A., 2022. UK's first lithium refinery to be built in boost for electric car industry. *The Guardian* 7.11.2022. Accessed October 10, 2023: www.theguardian.com/business/2022/nov/07/uk-lithium-refinery-electric-car-industry-green-lithium-pd-ports-teesport

Lederer, M., 2022. The promise of Prometheus and the opening up of Pandora's Box: Anthropological geopolitics of renewable energy. *Geopolitics* 27, 655–679. https://doi.org/10.1080/14650045.2020.1820486

Lee, J., Bazilian, M., Sovacool, B., Hund, K., Jowitt, S. M., Nguyen, T. P., Månberger, A., Kah, M., Greene, S., Galeazzi, C., Awuah-Offei, K., Moats, M., Tilton, J., Kukoda, S., 2020. Reviewing the material and metal security of low-carbon energy transitions. *Renewable and Sustainable Energy Reviews* 124, 109789. https://doi.org/10.1016/j.rser.2020.109789

Lempinen, H., 2019. "Barely surviving on a pile of gold": Arguing for the case of peat energy in 2010s Finland. *Energy Policy* 128, 1–7. https://doi.org/10.1016/J.ENPOL.2018.12.041

Leonard, A., Ahsan, A., Charbonnier, F., Hirmer, S., 2022. The resource curse in renewable energy: A framework for risk assessment. *Energy Strategy Reviews* 41, 100841. https://doi.org/10.1016/j.esr.2022.100841

Lockwood, M., 2021. A hard act to follow? The evolution and performance of UK climate governance. *Environmental Politics* 30, 26–48. https://doi.org/10.1080/09644016.2021.1910434

Lockwood, M., Kuzemko, C., Mitchell, C., Hoggett, R., 2017. Historical institutionalism and the politics of sustainable energy transitions: A research agenda. *Environment and Planning C: Politics and Space* 35, 312–333. https://doi.org/10.1177/0263774X16660561

Lockwood, M., Mitchell, C., Hoggett, R., 2022. Energy governance in the United Kingdom, in: Knodt, M., Kemmerzell, J. (Eds.), *Handbook of Energy Governance in Europe*. Springer, Cham, pp. 1255–1285.

Lubell, H., 1961. Security of supply and energy policy in Western Europe. *World Politics* 13, 400–422. https://doi.org/10.2307/2009482

Lundvall, B. Å., Borrás, S., 2005. Science, technology and innovation policy, in: Fagerberg, J., Movery, D. C. (Eds.), *The Oxford Handbook of Innovation*, Oxford University Press, Oxford, pp. 599–631.

MacKinnon, D., Karlsen, A., Dawley, S., Steen, M., Afewerki, S., Kenzhegaliyeva, A., 2022. Legitimation, institutions and regional path creation: A cross-national study of offshore wind. *Regional Studies* 56, 644–655. https://doi.org/10.1080/00343404.2020.1861239

MacNeil, R., Beauman, M., 2022. Understanding resistance to just transition ideas in Australian coal communities. *Environmental Innovation and Societal Transitions* 43, 118–126. https://doi.org/10.1016/J.EIST.2022.03.007

Mäkitie, T., 2020. Corporate entrepreneurship and sustainability transitions Resource redeployment of oil and gas industry firms in floating wind power. *Technology Analysis*

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 13 Nov 2026 at 06:57:54, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009368155

& Strategic Management 32, 474–488. https://doi.org/10.1080/09537325.2019.1668553

Mäkitie, T., Normann, H. E., Thune, T. M., Sraml Gonzalez, J., 2019. The green flings: Norwegian oil and gas industry's engagement in offshore wind power. *Energy Policy* 127, 269–279. https://doi.org/10.1016/j.enpol.2018.12.015

Månberger, A., Johansson, B., 2019. The geopolitics of metals and metalloids used for the renewable energy transition. *Energy Strategy Reviews* 26, 100394. https://doi.org/10.1016/j.esr.2019.100394

Månsson, A., Johansson, B., Nilsson, L. J., 2014. Assessing energy security: An overview of commonly used methodologies. *Energy* 73, 1–14. https://doi.org/10.1016/J.ENERGY.2014.06.073

Marín, A., Goya, D., 2021. Mining – The dark side of the energy transition. *Environmental Innovation and Societal Transitions* 41, 86–88. https://doi.org/10.1016/J.EIST.2021.09.011

Markard, J., 2020. The life cycle of technological innovation systems. *Technological Forecasting and Social Change* 153. https://doi.org/10.1016/j.techfore.2018.07.045

Markard, J., Geels, F. W., Raven, R., 2020. Challenges in the acceleration of sustainability transitions. *Environmental Research Letters* 15, 081001. https://doi.org/10.1088/1748-9326/AB9468

Markard, J., Raven, R., Truffer, B., 2012. Sustainability transitions: An emerging field of research and its prospects. *Research Policy* 41, 955–967. https://doi.org/10.1016/j.respol.2012.02.013

Mata Pérez, M. de la E., Scholten, D., Smith Stegen, K., 2019. The multi-speed energy transition in Europe: Opportunities and challenges for EU energy security. *Energy Strategy Reviews* 26, 100415. https://doi.org/10.1016/j.esr.2019.100415

May, P. J., Sapotichne, J., Workman, S., 2006. Policy coherence and policy domains. *Policy Studies Journal* 34, 381–403. https://doi.org/10.1111/j.1541-0072.2006.00178.x

McCulloch, N., Natalini, D., Hossain, N., Justino, P., 2022. An exploration of the association between fuel subsidies and fuel riots. *World Development* 157, 105935. https://doi.org/10.1016/j.worlddev.2022.105935

McSweeney, B., 1999. *Security, Identity and Interests: A Sociology of International Relations*. Cambridge University Press, New York.

MEAC, 2022. Gas market. Ministry of Economic Affairs and Communications, Tallinn, Estonia. Accessed March 31, 2022: www.mkm.ee/en/objectives-activities/energy-sector/gas-market.

MEE, 2014. Tuulivoiman edistämistyöryhmän loppuraportti. Publications of the Ministry of Economic Affairs and Employment 3/2014. Accessed October 10, 2023: https://tem.fi/documents/1410877/2859687/Tuulivoiman+edist%C3%A4misty%C3%B6ryhm%C3%A4n+loppuraportti+31032014.pdf

MEE, 2017. Government report on the National Energy and Climate Strategy for 2030. Publications of the Ministry of Economic Affairs and Employment 12/2027, Helsinki, Finland. Accessed October 10, 2023: https://tem.fi/documents/1410877/2769658/Government+report+on+the+National+Energy+and+Climate+Strategy+for+2030/0bb2a7be-d3c2-4149-a4c2-78449ceb1976

MEE, 2022. Carbon neutral Finland 2035 – National climate and energy strategy. Publications of the Ministry of Economy Affairs and Employment 2022:55, Helsinki, Finland. Accessed October 10, 2023: https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/164323/TEM_2022_55.pdf

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 13 Nov 2026 at 06:57:54, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009368155

Michaux, S. P., 2021. Assessment of the extra capacity required of alternative energy electrical power systems to completely replace fossil fuels. GTK Open File Work Report 42/2021. Espoo.

Mickwitz, P., Aix, F., Beck, S., Carrs, D., Ferrand, N., Görg, C., Jenssen, A., Kivimaa, P., Kuhlicke, C., Kuindersma, W., Manez, M., Melanen, M., Monni, S., Pedersen, A. B., Reinert, H., van Bommel, S., 2009. Climate policy integration, coherence and governance. PEER Report No. 2. Partnership for European Environmental Research, Helsinki. Accessed October 10, 2023: https://pure.au.dk/ws/files/56076592/PEER_Report2.pdf

Ministry of Defence, 2019. Ministry of defence single departmental plan. Ministry of Defence, London UK. Accessed June 7, 2023: www.gov.uk/government/publications/ministry-of-defence-single-departmental-plan/ministry-of-defence-single-departmental-plan-2019

Ministry of Defence, 2021. Public opinion on national defence 2021. Estonian Ministry of Defence, Tallinn, Estonia. Accessed October 27, 2023: https://kaitseministeerium.ee/sites/default/files/elfinder/article_files/public_opinion_and_national_defence_2021_spring.pdf

MoD, 2015. Sustainable MOD strategy: Act & evolve. 2015–2025. Accessed October 10, 2023: https://assets.publishing.service.gov.uk/media/5a803debed915d74e622d4d5/Sustainable_MOD_Strategy_2015-2025.pdf

MoD, 2021. Ministry of defence climate change and sustainability strategic approach. Ministry of Defence, London, UK. Accessed: May 14, 2024. www.gov.uk/government/publications/ministry-of-defence-climate-change-and-sustainability-strategic-approach

MoD, 2023. Puolustusmenot. Ministry of Defence, Helsinki, Finland. Accessed October 5, 2023: www.defmin.fi/ministerio/toiminta_ja_talous/puolustusmenot#5316504d

MoFA, 2020. Government report on Finnish foreign and security policy, 2020:32. Ministry for Foreign Affairs of Finland, Helsinki, Finland. Accessed October 10, 2023: https://julkaisut.valtioneuvosto.fi/handle/10024/162515

Morone, P., Lopolito, A., Anguilano, D., Sica, E., Tartiu, V. E., 2016. Unpacking landscape pressures on socio-technical regimes: Insights on the urban waste management system. *Environmental Innovation and Societal Transitions* 20, 62–74. https://doi.org/10.1016/J.EIST.2015.10.005

Mowery, D. C., 2012. Defense-related R&D as a model for "grand Challenges" technology policies. *Research Policy* 41, 1703–1715. https://doi.org/10.1016/j.respol.2012.03.027

Munro, F., 2018. Renewable energy in Scotland: Extending the transition-periphery dynamics approach. PhD thesis, University of Glasgow, Glasgow. https://theses.gla.ac.uk/8714/

Musiolik, J., Markard, J., Hekkert, M., 2012. Networks and network resources in technological innovation systems: Towards a conceptual framework for system building. *Technological Forecasting and Social Change* 79, 1032–1048. https://doi.org/10.1016/J.TECHFORE.2012.01.003

Myllyntaus, T., 1991. *Electrifying Finland: The Transfer of a New Technology into a Late Industrialising Economy*. Macmillan, London, UK.

Naber, R., Raven, R., Kouw, M., Dassen, T., 2017. Scaling up sustainable energy innovations. *Energy Policy* 110, 342–354. https://doi.org/10.1016/j.enpol.2017.07.056

Neal, A. W., 2017. *Security in a Small Nation: Scotland, Democracy, Politics*. Open Book Publishers, Cambridge. Accessed October 10, 2023: www.openbookpublishers.com/books/10.11647/obp.0078

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 13 Nov 2026 at 06:57:54, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009368155

Nemes, G., Chiffoleau, Y., Zollet, S., Collison, M., Benedek, Z., Colantuono, F., Dulsrud, A., Fiore, M., Holtkamp, C., Kim, T.-Y., Korzun, M., Mesa-Manzano, R., Reckinger, R., Ruiz-Martínez, I., Smith, K., Tamura, N., Viteri, M. L., Orbán, É. 2021. The impact of COVID-19 on alternative and local food systems and the potential for the sustainability transition: Insights from 13 countries. *Sustainable Production and Consumption* 28, 591–599. https://doi.org/10.1016/j.spc.2021.06.022

NESA, 2022. Vuosikatsaus/Annual report 2021. National Emergency Supply Agency, Helsinki, Finland. Accessed October 10, 2023: www.huoltovarmuuskeskus.fi/files/72ebfbbd7bb98ee70a14437fd291ab29638e854b/hvk-vuosikatsaus-2021.pdf

NESA, 2023. The national emergency supply agency. National Emergency Supply Agency, Helsinki, Finland. Accessed October 10, 2023: www.huoltovarmuuskeskus.fi/en/organisation/the-national-emergency-supply-agency

Nilsson, M., Persson, Å., 2003. Framework for analysing environmental policy integration. *Journal of Environmental Policy and Planning* 5, 333–359. https://doi.org/10.1080/1523908032000171648

Nilsson, M., Zamparutti, T., Petersen, J. E., Nykvist, B., Rudberg, P., McGuinn, J., 2012. Understanding policy coherence: Analytical framework and examples of sector-environment policy interactions in the EU. *Environmental Policy and Governance* 22, 395–423. https://doi.org/10.1002/eet.1589

Nokkala, Arto, 2014. *Kyky ja tahto: Suomen puolustus murroksessa, Suomen puolustus murroksessa*. Docendo, Jyväskylä.

Normann, S., 2021. Green colonialism in the Nordic context: Exploring Southern Saami representations of wind energy development. *Journal of Community Psychology* 49, 77–94. https://doi.org/10.1002/jcop.22422

Norwegian Ministry of Foreign Affairs, 2019. Meld. St. 27 (2018–2019) Report to the Storting (white paper) Norway's role and interests in multilateral cooperation. Norwegian Ministry of Foreign Affairs, Oslo.

Novalia, W., McGrail, S., Rogers, B. C., Raven, R., Brown, R. R., Loorbach, D., 2022. Exploring the interplay between technological decline and deinstitutionalisation in sustainability transitions. *Technological Forecasting and Social Change* 180, 121703. https://doi.org/10.1016/j.techfore.2022.121703

Nyberg, D., Wright, C., Kirk, J., 2018. Dash for gas: Climate change, hegemony and the scalar politics of fracking in the UK. *British Journal of Management* 29, 235–251. https://doi.org/10.1111/1467-8551.12291

Oesch, P., 2022. Energiahuoltovarmuus testissä. *Maanpuolustus* 142, 20–23. Accessed October 10, 2023: www.maanpuolustus-lehti.fi/energiahuoltovarmuus-testissa/

Ofgem, 2023. All available charts. Office of Gas and Electricity Markets, London, UK. Accessed October 10, 2023: www.ofgem.gov.uk/energy-data-and-research/data-portal/all-available-charts

Onifade, S. T., Alola, A. A., Erdoğan, S., Acet, H., 2021. Environmental aspect of energy transition and urbanization in the OPEC member states. *Environmental Science and Pollution Research* 28, 17158–17169. https://doi.org/10.1007/s11356-020-12181-1

Osborne, S. P., 2006. The new public governance? *Public Management Review* 8, 377–387. https://doi.org/10.1080/14719030600853022

Overland, I., 2019. The geopolitics of renewable energy: Debunking four emerging myths. *Energy Research and Social Science* 49, 36–40. https://doi.org/10.1016/j.erss.2018.10.018

Pakalkaitė, V., Posaner, J., 2019. The Baltics: Between competition and cooperation, in: Godzimirski, J. (Ed.), *New Political Economy of Energy in Europe*. Springer, pp. 215–237. https://doi.org/10.1007/978-3-319-93360-3_9

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 13 Nov 2026 at 06:57:54, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009368155

Paltsev, S., 2016. The complicated geopolitics of renewable energy. *Bulletin of the Atomic Scientists* 72, 390–395. https://doi.org/10.1080/00963402.2016.1240476

Patel, S., 2023. Hydropower plant in Norway partly Collapses due to floods. *Power Magazine* 10.8.2023. Accessed September 11, 2023: www.powermag.com/hydropower-plant-in-norway-partly-collapses-due-to-floods/#:~:text=Record%2Dhigh%20river%20levels%20stemming,Eco%27s%20Braskereidfoss%20hydroelectric%20power%20plant

Pearson, P., Watson, J., 2012. UK Energy Policy 1980–2010: A history and lessons to be learnt. The Institution of Engineering and Technology, London, UK.

Peoples, C., Vaughan-Williams, N., 2015. *Critical Security Studies: An Introduction*. Routledge, Abingdon, Oxon.

Pesu, M., 2017. Koskiveneellä kohti valtavirtaa: Suomen puolustuspolitiikka kylmän sodan lopusta 2010-luvun kiristyneeseen turvallisuusympäristöön. Publications of the Ministry of Defence 1/2027, Helsinki, Finland. Accessed October 10, 2023: https://julkaisut.valtioneuvosto.fi/handle/10024/79901

Pesu, M., Iso-Markku, T., 2020. The deepening Finnish-Swedish security and defence relationship, FIIA Briefing Paper 291. Finnish Institute for International Affairs, Helsinki, Finland. Accessed October 10, 2023: www.fiia.fi/wp-content/uploads/2020/09/bp291_the_finnish-swedish_security_and_defence_relationship.pdf

Pflugmann, F., De Blasio, N., 2020. The geopolitics of renewable hydrogen in low-carbon energy markets. *Geopolitics, History, and International Relations* 12, 9–44. https://doi.org/10.22381/GHIR12120201

Piirimäe, K., 2020. From an "Army of Historians" to an "Army of Professionals": History and the strategic culture in Estonia. *Scandinavian Journal of Military Studies* 3, 100–113. https://doi.org/10.31374/SJMS.37

Piotrowski, C. S., 2018. Security policy of the Baltic states and its determining factors. *Security and Defence Quarterly* 22, 46–70. https://doi.org/10.5604/01.3001.0012.7586

PMO, 2009. Finnish security and defence policy. Prime Minister's Office, Finland. Accessed October 10, 2023: https://vnk.fi/julkaisu?pubid=3740

PMO, 2016. Government Report on Finnish Foreign and Security Policy. Prime Minister's Office Publications 9/2016, Finland.

Pöntinen, P., 2023. Itärajasta ei tule tuuliparatiisia. Suomen kuvalehti 23.1.2023. Accessed October 10, 2023: https://suomenkuvalehti.fi/kotimaa/takaisku-ita-suomelle-ministerioiden-selvitysmies-tuulipuistojen-tutkahaittaa-mahdotonta-ratkaista-teknisesti/

Prause, G., Tuisk, T., Olaniyi, E. O., 2019. Between sustainability, social cohesion and security regional development in northeastern Estonia. *Entrepreneurship and Sustainability Issues* 6, 1235–1254. https://doi.org/10.9770/jesi.2019.6.3(13)

Prosekov, A. Y., Ivanova, S. A., 2018. Food security: The challenge of the present. *Geoforum* 91, 73–77. https://doi.org/10.1016/J.GEOFORUM.2018.02.030

Qu, Y., Hooper, T., Swales, J. K., Papathanasopoulou, E., Austen, M. C., Yan, X., 2021. Energy-food nexus in the marine environment: A macroeconomic analysis on offshore wind energy and seafood production in Scotland. *Energy Policy* 149, 112027. https://doi.org/10.1016/j.enpol.2020.112027

Quitzow, R., Thielges, S., 2022. The German energy transition as soft power. *Review of International Political Economy* 29, 598–623. https://doi.org/10.1080/09692290.2020.1813190

Raik, K., Rikmann, E., 2021. Resisting domestic and external pressure towards de-Europeanization of foreign policy? The case of Estonia. *Journal of European Integration* 43, 603–618. https://doi.org/10.1080/07036337.2021.1927011

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 13 Nov 2026 at 06:57:54, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009368155

Raven, R., Van Den Bosch, S., Weterings, R., 2010. Transitions and strategic niche management: Towards a competence kit for practitioners. *International Journal of Technology Management* 51, 57–74. https://doi.org/10.1504/IJTM.2010.033128

Regilme, S., Hartmann, H., 2019. Global shift, in: Romaniuk, S., Thapa, M., Marton, P. (Eds.), *The Palgrave Encyclopedia of Global Security Studies*. Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-319-74336-3_53-2

Resmonitor EU, 2021. Conflicts between national security reasons and wind energy development in Estonia. Resmonitor EU 25.10.2021. Accessed October 5, 2023: https://resmonitor.eu/en/ee/barriers/286/

Righettini, M. S., Lizzi, R., 2022. How scholars break down "policy coherence": The impact of sustainable development global agendas on academic literature. *Environmental Policy and Governance* 32, 98–109. https://doi.org/10.1002/eet.1966

Rip, A., Kemp, R., 1998. Technological change, in: Rayner, S., Malone, E. L. (Eds.), *Human Choice and Climate Change. Vol. II, Resources and Technology*, Springer, Cham, pp. 327–399.

Ritchie, N., 2016. Nuclear identities and Scottish independence. *The Nonproliferation Review* 23, 653–675. https://doi.org/10.1080/10736700.2017.1345517

Rock, M., Murphy, J. T., Rasiah, R., van Seters, P., Managi, S., 2009. A hard slog, not a leap frog: Globalization and sustainability transitions in developing Asia. *Technological Forecasting and Social Change* 76, 241–254. https://doi.org/10.1016/j.techfore.2007.11.014

Roe, P., 2008. The "value" of positive security. *Review of International Studies* 34, 777–794. https://doi.org/10.1017/S0260210508008279

Roe, P., 2012. Is securitization a "negative" concept? Revisiting the normative debate over normal versus extraordinary politics. *Security Dialogue* 43, 249–266. https://doi.org/10.1177/0967010612443723

Rogers-Hayden, T., Hatton, F., Lorenzoni, I., 2011. "Energy security" and "climate change": Constructing UK energy discursive realities. *Global Environmental Change* 21, 134–142. https://doi.org/10.1016/j.gloenvcha.2010.09.003

Rogge, K. S., Johnstone, P., 2017. Exploring the role of phase-out policies for low-carbon energy transitions: The case of the German Energiewende. *Energy Research and Social Science* 33, 128–137. https://doi.org/10.1016/j.erss.2017.10.004

Rogge, K. S., Reichardt, K., 2016. Policy mixes for sustainability transitions: An extended concept and framework for analysis. *Research Policy* 45, 1620–1635. https://doi.org/10.1016/J.RESPOL.2016.04.004

Rosenbloom, D., Rinscheid, A., 2020. Deliberate decline: An emerging frontier for the study and practice of decarbonization. *WIREs Climate Change* 11, e669. https://doi.org/10.1002/wcc.669

Runhaar, H., Wilk, B., Driessen, P., Dunphy, N., Persson, Å., Meadowcroft, J., Mullally, G., 2020. Policy integration, in: Biermann, F., Kim, R. (Eds.), *Architectures of Earth System Governance: Institutional Complexity and Structural Transformation*. Cambridge University Press, Cambridge, pp. 183–206.

Runhaar, H., Wilk, B., Persson, Å., Uittenbroek, C., Wamsler, C., 2018. Mainstreaming climate adaptation: Taking stock about "what works" from empirical research worldwide. *Regional Environmental Change* 18, 1201–1210. https://doi.org/10.1007/s10113-017-1259-5

Ruostetsaari, I., 2010. Changing regulation and governance of Finnish energy policy making: New rules but old elites? *Review of Policy Research* 27, 273–297. https://doi.org/10.1111/j.1541-1338.2010.00442.x

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 13 Nov 2026 at 06:57:54, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009368155

Ruostetsaari, I., 2017. Stealth democracy, elitism, and citizenship in Finnish energy policy. *Energy Research & Social Science* 34, 93–103. https://doi.org/10.1016/j.erss.2017.06.022

Russel, D., Jordan, A., 2009. Joining up or pulling apart? The use of appraisal to coordinate policy making for sustainable development. *Environment and Planning A* 41, 1201–1216. https://doi.org/10.1068/a4142

Russel, D. J., den Uyl, R. M., de Vito, L., 2018. Understanding policy integration in the EU – Insights from a multi-level lens on climate adaptation and the EU's coastal and marine policy. *Environmental Science and Policy* 82, 44–51. https://doi.org/10.1016/j.envsci.2017.12.009

Safarzyńska, K., Frenken, K., Van Den Bergh, J. C. J. M., 2012. Evolutionary theorizing and modeling of sustainability transitions. *Research Policy* 41, 1011–1024. https://doi.org/10.1016/j.respol.2011.10.014

Santos Ayllón, L. M., Jenkins, K. E. H., 2023. Energy justice, just transitions and Scottish energy policy: A re-grounding of theory in policy practice. *Energy Research & Social Science* 96, 102922. https://doi.org/10.1016/j.erss.2022.102922

Scholten, D., 2018. The geopolitics of renewables – An introduction and expectations, in: Scholten, D. (Ed.), *The Geopolitics of Renewables*, Springer, pp. 1–33. https://doi.org/10.1007/978-3-319-67855-9_1

Scholten, D., Bazilian, M., Overland, I., Westphal, K., 2020. The geopolitics of renewables: New board, new game. *Energy Policy* 138, 111059. https://doi.org/10.1016/j.enpol.2019.111059

Scholten, D., Bosman, R., 2016. The geopolitics of renewables; exploring the political implications of renewable energy systems. *Technological Forecasting and Social Change* 103, 273–283. https://doi.org/10.1016/j.techfore.2015.10.014

Schönach, P., 2021. Rajattoman ilmakehän saastumista ja suojelua, in: *Suomen Ympäristöhistoria: 1700-Luvulta Nykypäivään*. Vastapaino, Tampere.

Schot, J., Geels, F. W., 2008. Strategic niche management and sustainable innovation journeys: Theory, findings, research agenda, and policy. *Technology Analysis and Strategic Management* 20, 537–554. https://doi.org/10.1080/09537320802292651

Schot, J., Kanger, L., 2018. Deep transitions: Emergence, acceleration, stabilization and directionality. *Research Policy* 47(6), 1045–1059. https://doi.org/10.1016/j.respol.2018.03.009

Schot, J., Steinmueller, W. E., 2018. Three frames for innovation policy: R&D, systems of innovation and transformative change. *Research Policy* 47, 1554–1567. https://doi.org/10.1016/j.respol.2018.08.011

Scott, W. R., 2001. *Institutions and Organizations. Ideas, Interests and Identities*. SAGE Publications.

Scottish Government, 2022. Energy statistics for Scotland – Q2 2022. Scottish Government, Edinburgh, UK. Accessed October 6, 2023: www.gov.scot/publications/energy-statistics-for-scotland-q2-2022/pages/renewable-electricity-capacity/

Scottish Government, 2023. Draft energy strategy and just transition plan – Delivering a fair and secure zero carbon energy system for Scotland. Scottish Government, Edinburgh, UK. Accessed October 10, 2023: www.gov.scot/publications/draft-energy-strategy-transition-plan/

Scottish Renewables, 2023. Statistics. Accessed October 6, 2023: www.scottishrenewables.com/our-industry/statistics

Sharples, J. D., 2016. The shifting geopolitics of Russia's natural gas exports and their impact on EU-Russia gas relations. *Geopolitics* 21, 880–912. https://doi.org/10.1080/14650045.2016.1148690

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 13 Nov 2026 at 06:57:54, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009368155

Shove, E., Walker, G., 2010. Governing transitions in the sustainability of everyday life. *Research Policy, Special Section on Innovation and Sustainability Transitions* 39, 471–476. https://doi.org/10.1016/j.respol.2010.01.019

Siddi, M., 2018. The role of power in EU–Russia energy relations: The interplay between markets and geopolitics. *Europe – Asia Studies* 70, 1552–1571. https://doi.org/10.1080/09668136.2018.1536925

Sillak, S., Kanger, L., 2020. Global pressures vs. local embeddedness: The de- and restabilization of the Estonian oil shale industry in response to climate change (1995–2016). *Environmental Innovation and Societal Transitions* 34, 96–115. https://doi.org/10.1016/j.eist.2019.12.003

Silvester, B. R., Fisker, J. K. 2023. A relational approach to the role of the state in societal transitions and transformations towards sustainability. *Environmental Innovation and Societal Transitions* 47, 100717. DOI: 10.1016/j.eist.2023.100717

Sivonen, M. H., Kivimaa, P., 2023. Politics in the energy-security nexus: An epistemic governance approach to the zero-carbon energy transition in Finland, Estonia, and Norway. *Environmental Sociology*, available online. https://doi.org/10.1080/23251042.2023.2251873

Skjølsvold, T. M., Ryghaug, M., Throndsen, W., 2020. European island imaginaries: Examining the actors, innovations, and renewable energy transitions of 8 islands. *Energy Research & Social Science* 65, 101491. https://doi.org/10.1016/j.erss.2020.101491

Smith, A., Raven, R., 2012. What is protective space? Reconsidering niches in transitions to sustainability. *Research Policy* 41, 1025–1036. https://doi.org/10.1016/j.respol.2011.12.012

Smith, A., Voß, J. P., Grin, J., 2010. Innovation studies and sustainability transitions: The allure of the multi-level perspective and its challenges. *Research Policy* 39, 435–448. https://doi.org/10.1016/J.RESPOL.2010.01.023

Smith Stegen, K., 2015. Heavy rare earths, permanent magnets, and renewable energies: An imminent crisis. *Energy Policy* 79, 1–8. https://doi.org/10.1016/j.enpol.2014.12.015

Sörlin, S., Dale, B., Keeling, A., & Larsen, J. N. 2022. Patterns of Arctic extractivism: Past and present, in: Sörlin, S. (Ed.), *Resource Extraction and Arctic Communities: The New Extractivist Paradigm*. Cambridge University Press, Cambridge and New York, pp. 35–65.

Sovacool, B. 2019. The precarious political economy of cobalt: Balancing prosperity, poverty, and brutality in artisanal and industrial mining in the Democratic Republic of the Congo. *The Extractive Industries and Society* 6(3), 915–939. https://doi.org/10.1016/J.EXIS.2019.05.018

Sovacool, B. K., Hook, A., Martiskainen, M., Baker, L., 2019. The whole systems energy injustice of four European low-carbon transitions. *Global Environmental Change* 58, 101958. https://doi.org/10.1016/j.gloenvcha.2019.101958

Sovacool, B. K., Mukherjee, I., 2011. Conceptualizing and measuring energy security: A synthesized approach. *Energy* 36, 5343–5355. https://doi.org/10.1016/J.ENERGY.2011.06.043

Sovacool, B. K., Turnheim, B., Martiskainen, M., Brown, D., Kivimaa, P., 2020. Guides or gatekeepers? Incumbent-oriented transition intermediaries in a low-carbon era. *Energy Research and Social Science* 66, 101490. https://doi.org/10.1016/j.erss.2020.101490

Statistics Estonia, 2021. Ida-Viru county. Accessed November 12, 2021: www.stat.ee/en/find-statistics/statistics-region/ida-viru-count

Statistics Estonia, 2023. Energy. Accessed October 4, 2023: www.stat.ee/en/find-statistics/statistics-theme/energy-and-transport/energy

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 13 Nov 2026 at 06:57:54, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009368155

Statistics Finland, 2022. Share of energy imported from Russia 34 per cent of total energy consumption in 2021. Accessed October 5, 2023: www.stat.fi/en/publication/cl1xmekvw1pp80buvn1cznxmy

Statistics Finland, 2023. Energian hankinta ja kulutus. Accessed October 5, 2023: www.stat.fi/tilasto/ehk

Statistics Norway, 2023a. Production and consumption of energy, energy balance and energy account. Accessed October 5, 2023: www.ssb.no/en/statbank/table/11561/

Statistics Norway, 2023b. Electricity. Accessed October 5, 2023: www.ssb.no/en/energi-og-industri/energi/statistikk/elektrisitet

Stenvall, J., Kinder, T., Kuoppakangas, P., Laitinen, I., 2018. Unlearning and public services – A case study with a Vygotskian approach. *Journal of Adult and Continuing Education* 24(2), 188–207. https://doi.org/10.1177/1477971418818570

Stirling, A., 2019. How deep is incumbency? A "configuring fields" approach to redistributing and reorienting power in socio-material change. *Energy Research & Social Science* 58, 101239. https://doi.org/10.1016/j.erss.2019.101239

Strambo, C., Nilsson, M., Månsson, A., 2015. Coherent or inconsistent? Assessing energy security and climate policy interaction within the European Union. *Energy Research and Social Science* 8, 1–12. https://doi.org/10.1016/j.erss.2015.04.004

Štreimikiene, D., Strielkowski, W., Bilan, Y., Mikalauskas, I., 2016. Energy dependency and sustainable regional development in the Baltic States – A review. *Geographica Pannonica* 20, 79–87. https://doi.org/10.5937/GeoPan1602079S

Studemeyer, C. C., 2019. Cooperative agendas and the power of the periphery: The US, Estonia, and NATO after the Ukraine crisis. *Geopolitics* 24, 787–810. https://doi.org/10.1080/14650045.2018.1496911

Szulecki, K. (Ed.), 2018a. *Energy Security in Europe: Divergent Perceptions and Policy Challenges*. Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-319-64964-1

Szulecki, K., 2018b. The multiple faces of energy security: An introduction, in: Szulecki, K. (Ed.), *Energy Security in Europe: Divergent Perceptions and Policy Challenges*. Palgrave Macmillan, Cham, pp. 1–30.

Szulecki, K., Kusznir, J., 2018. Energy security and energy transition: Securitisation in the electricity sector, in: Szulecki, K. (Ed.), *Energy Security in Europe Divergent Perceptions and Policy Challenges*. Palgrave Macmillan, Cham, pp. 107–148.

Szulecki, K., Westphal, K., 2018. Taking security seriously in EU energy governance: Crimean shock and the energy union, in: Szulecki, K. (Ed.), *Energy Security in Europe*. Palgrave Macmillan, Cham, pp. 177–202.

Tafon, R., Howarth, D., Griggs, S., 2019. The politics of Estonia's offshore wind energy programme: Discourse, power and marine spatial planning. *Environment and Planning C: Politics and Space* 37, 157–176. https://doi.org/10.1177/2399654418778037

Toke, D., Vezirgiannidou, S.-E., 2013. The relationship between climate change and energy security: Key issues and conclusions. *Environmental Politics* 22, 537–552. https://doi.org/10.1080/09644016.2013.806631

Tõnurist, P., 2015. Framework for analysing the role of state owned enterprises in innovation policy management: The case of energy technologies and Eesti Energia. *Technovation* 38, 1–14. https://doi.org/10.1016/J.TECHNOVATION.2014.08.001

Tosun, J., Lang, A., 2017. Policy integration: Mapping the different concepts. *Policy Studies* 38, 553–570. https://doi.org/10.1080/01442872.2017.1339239

Trombetta, M. J., 2009. Environmental security and climate change: Analysing the discourse. *Cambridge Review of International Affairs* 21, 585–602. https://doi.org/10.1080/09557570802452920

Truffer, B., Rohracher, H., Kivimaa, P., Raven, R., Alkemade, F., Carvalho, L., Feola, G., 2022. A perspective on the future of sustainability transitions research. *Environmental*

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 13 Nov 2026 at 06:57:54, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009368155

Innovation and Societal Transitions 42, 331–339. https://doi.org/10.1016/J.EIST.2022.01.006

Tuathail, G. Ó., 1999. Understanding critical geopolitics: Geopolitics and risk society. *The Journal of Strategic Studies* 22, 107–124.

Turnheim, B., Geels, F. W., 2012. Regime destabilisation as the flipside of energy transitions: Lessons from the history of the British coal industry (1913–1997). *Energy Policy, Special Section: Past and Prospective Energy Transitions – Insights from History* 50, 35–49. https://doi.org/10.1016/j.enpol.2012.04.060

Turnheim, B., Geels, F. W., 2013. The destabilisation of existing regimes: Confronting a multi-dimensional framework with a case study of the British coal industry (1913–1967). *Research Policy*, 42, 1749–1767. https://doi.org/10.1016/j.respol.2013.04.009

Turnheim, B., Kivimaa, P., Berkhout, F., 2018. *Innovating Climate Governance Moving beyond Experiments*. Cambridge University Press, Cambridge.

Tynkkynen, V.-P., 2021. *The Energy of Russia: Hydrocarbon Culture and Climate Change*. Edward Elgar Publishing, Cheltenham.

Umbach, F., 2010. Global energy security and the implications for the EU. *Energy Policy* 38, 1229–1240. https://doi.org/10.1016/j.enpol.2009.01.010

UN, 1987. *Report of the World Commission on Environment and Development: Our Common Future*. United Nations, Geneva.

UN, 1994. *Human Development Report 1994: New Dimensions of Human Security*. United Nations, Geneva.

Upham, P., Kivimaa, P., Mickwitz, P., Åstrand, K., 2014. Climate policy innovation: A sociotechnical transitions perspective. *Environmental Politics* 23. https://doi.org/10.1080/09644016.2014.923632

Vakulchuk, R., Øverland, I., Scholten, D., 2020. Renewable energy and geopolitics: A review. *Renewable and Sustainable Energy Reviews* 122, 109547. https://doi.org/10.1016/j.rser.2019.109547

Van de Graaf, T., 2018. Battling for a shrinking market: Oil producers, the renewables revolution, and the risk of stranded assets, in: Scholten, D. (Ed.), *The Geopolitics of Renewables*. Springer International Publishing, Cham, pp. 97–121. https://doi.org/10.1007/978-3-319-67855-9_4

Van de Graaf, T., Overland, I., Scholten, D., Westphal, K., 2020. The new oil? The geopolitics and international governance of hydrogen. *Energy Research & Social Science* 70, 101667. https://doi.org/10.1016/j.erss.2020.101667

van der Laak, W. W. M., Raven, R. P. J. M., Verbong, G. P. J., 2007. Strategic niche management for biofuels: Analysing past experiments for developing new biofuel policies. *Energy Policy* 35, 3213–3225. https://doi.org/10.1016/j.enpol.2006.11.009

van der Vleuten, E., 2019. Radical change and deep transitions: Lessons from Europe's infrastructure transition 1815–2015. *Environmental Innovation and Societal Transitions* 32, 22–32. https://doi.org/10.1016/J.EIST.2017.12.004

van Driel, H., Schot, J., 2005. Radical innovation as a multilevel process: Introducing floating grain elevators in the Port of Rotterdam. *Technology and Culture* 46(1), 51–76.

van Mierlo, B., Beers, P. J., 2020. Understanding and governing learning in sustainability transitions: A review. *Environmental Innovation and Societal Transitions* 34, 255–269. https://doi.org/10.1016/J.EIST.2018.08.002

van Oers, L., Feola, G., Runhaar, H., Moors, E., 2023. Unlearning in sustainability transitions: Insight from two Dutch community-supported agriculture farms. *Environmental Innovation and Societal Transitions* 46, 100693. https://doi.org/10.1016/j.eist.2023.100693

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 13 Nov 2026 at 06:57:54, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009368155

Vanttinen, P., 2022. Estonia develops its first offshore wind farms. *Euractiv* 7.11.2022. Accessed October 4, 2023: www.euractiv.com/section/politics/short_news/estonia-develops-its-first-offshore-wind-farms/

Varho, V., 2007. Calm or storm? Wind power actors' perceptions of Finnish wind power and its future, Environmentalica Fennica. Doctoral thesis, University of Helsinki, Helsinki. Accessed October 10, 2023: https://helda.helsinki.fi/items/9864c1bf-979a-483e-ab32-e1b81dba5041

Vasser, M., 2021. Estonia: From shale to gale. *Acid News* 16–17.

Verbong, G. P. J., Geels, F. W., 2010. Exploring sustainability transitions in the electricity sector with socio-technical pathways. *Technological Forecasting and Social Change* 77, 1214–1221. https://doi.org/10.1016/j.techfore.2010.04.008

Vesa, J., Gronow, A., Ylä-Anttila, T., 2020. The quiet opposition: How the pro-economy lobby influences climate policy. *Global Environmental Change* 63, 102117. https://doi.org/10.1016/j.gloenvcha.2020.102117

Victor, D. G., Jaffe, A. M., Hayes, M. H., 2006. *Natural Gas and Geopolitics: From 1970 to 2040*. Cambridge University Press, Cambridge.

Vihma, A., Reischl, G., Andersen, A. N., 2021. A climate backlash: Comparing populist parties' climate policies in Denmark, Finland, and Sweden. *The Journal of Environment and Development* 30, 219–239. https://doi.org/10.1177/10704965211027748

von der Leyen, U., 2023. Statement by President von der Leyen at the joint press conference with Norwegian Prime Minister Støre, NATO Secretary-General Stoltenberg and CEO Opedal, 17.3.2023. Accessed October 4, 2023: https://ec.europa.eu/commission/presscorner/detail/en/statement_23_1723

Wæver, O., 1995. Securitization and desecuritization, in: *On Security*. Columbia University Press, New York, pp. 46–87.

Wæver, O., 2011. Politics, security, theory. *Security Dialogue* 42(4–5), 465. https://doi.org/10.1177/0967010611418718

Willrich, M., 1976. International energy issues and options. *Annual Review of Energy* 1, 743–772.

Wilson, J. D., 2018. Whatever happened to the rare earths weapon? Critical materials and international security in Asia. *Asian Security* 14, 358–373. https://doi.org/10.1080/14799855.2017.1397977

Wilson, S., 2022. Energy firms dominate Insider's Top500 Scottish companies. *Insider* 25.2.2022. Accessed October 6, 2023: www.insider.co.uk/special-reports/energy-firms-dominate-insiders-top500-26298171

Winzer, C., 2012. Conceptualizing energy security. *Energy Policy* 46, 36–48. https://doi.org/10.1016/J.ENPOL.2012.02.067

Wither, J. K., 2020. Back to the future? Nordic total defence concepts. *Defence Studies* 20, 61–81. https://doi.org/10.1080/14702436.2020.1718498

Wolfers, A., 1952. "National Security" as an ambiguous symbol. *Political Science Quarterly* 67, 481–502. https://doi.org/10.2307/2145138

Wood, M., 2017. *Depoliticisation: What Is It and Why Does It Matter?* Sheffield Political Economy Research Institute, Sheffield.

Wrange, J., Bengtsson, R., 2019. Internal and external perceptions of small state security: The case of Estonia. *European Security* 28, 449–472. https://doi.org/10.1080/09662839.2019.1665517

Yates, J., 2022. *The National Grid Rip-Off*. Tribune, London.

Yazar, M., Haarstad, H., 2023. Populist far right discursive-institutional tactics in European regional decarbonization. *Political Geography* 105, 102936. https://doi.org/10.1016/j.polgeo.2023.102936

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 13 Nov 2026 at 06:57:54, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009368155

Yergin, D., 1988. Energy security in the 1990s. *Foreign Affairs* 67(1), 110–132.
Yergin, D., 2009. It's still the one – ProQuest. *Foreign Policy* 174, 89–95.
Ylönen, M., Litmanen, T., Kojo, M., Lindell, P., 2017. The (de)politicisation of nuclear power: The Finnish discussion after Fukushima. *Public Understanding of Science* 26, 260–274. https://doi.org/10.1177/0963662515613678
Żuk, P., Szulecki, K., 2020. Unpacking the right-populist threat to climate action: Poland's pro-governmental media on energy transition and climate change. *Energy Research and Social Science* 66, 101485. https://doi.org/10.1016/j.erss.2020.101485

Downloaded from https://www.cambridge.org/core. UNIVERSIDAD AUTONOMA METROPOLITANA, on 13 Nov 2026 at 06:57:54, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/9781009368155